

Sonia Srikanth

Environmental Scan/Gap Analysis of Children at Risk in Delaware

Introduction

I chose to research factors that put children in Delaware at risk for suffering from adverse physical and mental health outcomes to further allow for these gaps to be addressed through awareness, advocacy, and policy. A variety of factors related to the social determinants of health impact the health and well-being of children in Delaware. The social determinants of health include: education access, healthcare access, economic stability, social and community context, and neighborhood/built environment, and gaps in any of these determinants have the capacity to adversely impact members of a community. The five risks that I found to be the most significant include: being overweight or obese, asthma, food insecurity, gun violence in neighborhoods and communities, and vaping. In this paper, I explain each risk and present data illustrating how each risk adversely affects children in Delaware.

The first risk is being overweight or obese, and this is a national public health crisis that disproportionately affects children in Delaware. Being overweight is defined as having a BMI between 25 and 29, and being obese is defined as having a BMI of 30 or above. Being overweight or obese significantly increases one's risk of suffering from a variety of adverse health outcomes such as heart disease, type 2 diabetes, hypertension, and adverse mental health outcomes. A research study performed by Nemour's Children's Hospital found that 40% of children in Delaware were considered overweight or obese in 2011 ("Childhood Overweight and Obesity in Delaware"). Further, this study found racial disparities among overweight and obese children. Specifically, 50% of Hispanic children in Delaware were overweight or obese ("Childhood Overweight and Obesity in Delaware"). The high prevalence of overweight and

obese children in Delaware can be attributed to a variety of factors. Firstly, this study found that 55.2% of Delaware children did not meet recommended levels of physical activity (“Childhood Overweight and Obesity in Delaware”). Secondly, 54% of Delaware children surpass the daily recommended screen time of 2 hours or less, contributing to the sedentary lifestyle of these children (“Childhood Overweight and Obesity in Delaware”). Additionally, 80% of parents of overweight children and 55% of parents of obese children were unaware of their children’s weight status and believed that their children were a healthy weight (“Childhood Overweight and Obesity in Delaware”). In 2015, Nemours Children’s Hospital invited guest speakers to discuss already implemented statewide efforts to combat childhood obesity in Delaware. One intervention included implementing exercise such as dancing, yoga, and games into early childhood programs at St. Michael’s School in Delaware (“Roundtable on Obesity Solutions”). Another intervention included policy mandating the assessment of student fitness once annually in elementary, middle, and high schools, and this policy motivated Christiana School districts to mandate 2 and a half hours of exercise weekly for their students (“Roundtable on Obesity Solutions”). While physical activity in school is important for combating obesity, further educational efforts can be implemented that encourage students to engage in physical activity at home to improve the consistency and quality of their physical activity.

The second risk is asthma, a chronic disease that disproportionately affects children in Delaware (Gao et al). Asthma is a lung disease that causes airway constriction, resulting in symptoms such as wheezing and shortness of breath. Asthma can lead to long-term adverse health complications including Gastroesophageal Reflux Disease, sleep apnea, and depression (Song et al). A survey conducted by Nemours Children’s Hospital in 2014 found that 17% of children (birth to 17 years old) in Delaware had asthma, which was 3% above the prevalence of

asthma in children nationwide, which was 14% (Gao et al). Further, this study found racial and gender disparities in the prevalence of asthma in Delaware children. Non-Hispanic black children had a 31% prevalence of asthma, which was higher than the prevalence in other races (Gao et al). Additionally, male children had a 20% prevalence of asthma, which was higher than the prevalence in females (Gao et al). Further, this study also found disparities in the prevalence of asthma in different locations. Delaware children in Wilmington had a 23% prevalence of asthma, which was higher than the prevalence in other cities and counties (Gao et al).

Additionally, prevalence varied based on weight. The prevalence of asthma among children who were obese was 26%, which was higher than the prevalence among children of healthy weights. This study also evaluated the effectiveness of implemented measures to manage asthma. It was found that 88% of parents of children with asthma were educated on recognizing signs indicating asthma attacks (Gao et al). Further 92% of parents were educated on how to treat asthma attacks (Gao et al). However, only 62% of parents were taught how to use a peak flow meter, an important instrument used to decide appropriate medication dosages (Gao et al). Additionally, 57% of parents reported experiencing one or more challenges when filling prescriptions for their child's asthma medications (Gao et al). Overall, these results illustrate that educational efforts among parents of children with asthma could be more comprehensive to ensure parents are able to use all medical devices needed to effectively manage their child's asthma. Further, the process of filling asthma prescriptions could be made easier potentially through better communication between healthcare facilities, pharmacies, and insurance companies.

The third risk is food insecurity. Food insecurity occurs when someone has insufficient and/or unreliable access to food, which can lead to hunger ("Food Insecurity"). Food insecurity can lead to adverse health outcomes including developmental issues, mental health problems,

and obesity (“Food Insecurity”). The Food Bank of Delaware found that 20% of children in Delaware were food insecure in 2022 (“Food insecurity on the rise in Delaware”). This prevalence is double the prevalence of food insecurity among children in the U.S., which was found to be 10% in 2022, as reported by the U.S. Department of Agriculture (“Fact Sheet: 2022 USDA Food Insecurity Report”). Further, the Food Bank of Delaware found that the rate of food insecurity among children in Kent County was 23%, which was higher than the rates in New Castle County and Sussex County (“Food insecurity on the rise in Delaware”). This data illustrates that Delaware children are disproportionately impacted by food insecurity, and children in Kent County are especially likely to experience food insecurity. Food insecurity can result from food deserts which lead to decreased access to food, especially in economically disadvantaged locations (Fossi et al). The University of Delaware reported that 61% of Delaware residents live in areas in counties that do not have any grocery stores (Fossi et al). Additionally, market conditions can impact food insecurity, and the Food Bank of Delaware found that increased food prices were exacerbating hunger in Delaware (“Food insecurity on the rise in Delaware”). A current implemented program that targets food insecurity nationwide is the Supplemental Nutrition Assistance Program, abbreviated SNAP (Fossi et al). SNAP provides nutritional benefits to economically disadvantaged families, and 15% of Delaware residents in 2017 were found to receive assistance from this program (Fossi et al). To address food insecurity specifically among children, state-wide programs increasing food access in daycares and schools should be also implemented.

The fourth risk is gun violence in neighborhoods and communities. Gun violence occurs when a gun is used to harm another person and, and it can result in life-threatening injuries and even premature death. Gun violence is a public health crisis and a leading cause of death among

children in the United States (“New Report Highlights U.S. 2022 Gun-Related Deaths”). The EFSGV found that in 2019, 10 children aged 10-19 died of gun violence in Delaware (“Delaware Gun Deaths”). Further, the EFSGV found that Delaware ranked 11 in the rate of gun deaths in the United States, and this illustrates that gun violence poses a risk to children in the U.S., but Delaware is faring better than over 75% of other states in the U.S (“Delaware Gun Deaths”). However, Delaware still has room for improvement to further reduce gun-related deaths among children. The CDC found that Delaware was the 28th best state with regards to gun safety in 2021 (Murphy et al). Additionally, the ATF found that most people committing gun-related crimes in Delaware bought their guns in Delaware (Murphy et al). These two pieces of data illustrate that Delaware can implement more gun safety improvement efforts such as increased training and education, and Delaware can also implement more regulations on purchasing guns themselves. Delaware has implemented a permit-to-purchase policy, requiring people who want to purchase a gun to pass background checks and other requirements (Murphy et al). However, further regulations such as a mental health screening and/or a waiting period between coming in to express interest in purchasing a gun and actually receiving a gun could be implemented to further regulate gun purchases.

The fifth risk is vaping. Vapes, also known as e-cigarettes are battery operated devices that often contain nicotine, and users inhale the nicotine into their lungs. Vaping can lead to adverse health consequences, especially during adolescence. Some consequences include drug addiction, increased cancer risk, lung disease, and negative effects on attention, impulses, emotions, and memory if vaping occurs during adolescence (“Health Effects of Vaping”). The Youth Tobacco Survey conducted in 2018 found that 17% of Delaware students between 6th and 12th grade have vaped within the last month (Ryding et al). This prevalence is comparable to the

national prevalence, and the FDA found that 21% of high school students currently vaped while 5% of middle school students currently vaped (“Results from 2018 National Youth Tobacco Survey show dramatic increase in e-cigarette use among youth over past year”). Further, the Youth Tobacco Survey found that 35% of high schoolers in Delaware have vaped at least once in their life (Ryding et al). Further, this study found that 80% of students report vaping if they have four friends who also vape (Ryding et al). Peer pressure is a likely motivator of the high prevalence of vaping among adolescents in Delaware. Additionally, vape products have an alluring look to them along with appetizing flavors, likely increasing their appeal to students (Ryding et al). One implemented policy to combat vaping in adolescents was a policy in 2019 that prohibited the selling of all tobacco products to individuals under the age of 21 (Ryding et al). In Delaware, a needs assessment was performed to assess health education efforts among schools in Delaware, and clear gaps in adherence to health education requirements were found (Ryding et al). This finding illustrates that stricter policies could be implemented requiring schools to adhere to the minimum required hours of substance and alcohol education, and this could standardize vaping prevention efforts among schools.

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